

CATALOG DOCUMENTATION
EMAP SURFACE WATERS PROGRAM LEVEL DATABASE
1993-1994 MID-ATLANTIC STREAMS DATA
STREAM FISH TISSUE CONTAMINANTS (METALS) DATA

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1. DATA SET IDENTIFICATION

1.1 Title of Catalog Document

EMAP Surface Waters Stream Database

1993-1994 Northeast Streams

Stream Fish Tissue Contaminants (Metals) Data Summarized by Stream

1.2 Authors of the Catalog Entry

U.S. EPA NHEERL Western Ecology Division

Corvallis, OR

1.3 Catalog Revision Date

Februrary 1999

1.4 Data Set Name

FTMET

1.5 Task Group

Surface Waters

1.6 Data Set Identification Code

126

1.7 Version

002

1.8 Requested Acknowledgment

These data were produced as part of the U.S. EPA's Environmental Monitoring and Assessment Program (EMAP). If you publish these data or use them for analyses in publications, EPA requires a standard statement for work it has supported:

"Although the data described in this article have been funded wholly or in part by the U.S. Environmental Protection Agency through its EMAP Surface Waters Program, it has not been subjected to Agency review, and therefore does not necessarily reflect the views of the Agency and no official endorsement of the conclusions should be inferred."

2. INVESTIGATOR INFORMATION

2.1 Principal Investigator

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2.2 Investigation Participant - Sample Collection

Oregon State University
State of Virginia
State of West Virginia
State of Maryland
State of Pennsylvania
University of Maine
U.S. Fish and Wildlife Service
U.S. Environmental Protection Agency
Office of Research and Development
Region III

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The primary function of the stream fish data are to provide a snapshot of the fish assemblage present in the stream at the time of sampling. The fish community represents an integral component of stream biological integrity and represents a snapshot of a publicly visible reflection of stream quality.

3.2 Keywords for the Data Set

Fish assemblage, fish community, fish species identification, fish tissue contamination

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

The Environmental Monitoring and Assessment Program (EMAP) was designed to periodically estimate the status and trends of the Nation's ecological resources on a regional basis. EMAP provides a strategy to identify and bound the extent, magnitude and location of environmental degradation and improvement on a regional scale based on a probability-based statistical survey design.

4.2 Data Set Objective

This data set is part of a demonstration project to evaluate approaches to monitoring streams in EMAP. The data set contains the results of multihabitat sample of the fish assemblage taken during spring base flow. A subsample of fish were selected for analysis of metal concentrations in tissue of a whole fish sample submitted for analysis.

4.3 Data Set Background Discussion

The fish community within a stream is an integral component of stream biological integrity and represents a publicly visible reflection of stream quality. Contamination of the fish community is a direct threat to the health of the fish community as well as to the human population consuming these fish. This data set contains the metal contaminant concentrations in whole-fish tissue sample collected at each stream.

4.4 Summary of Data Set Parameters

Fish Tissue Contaminants parameters include wet weight concentrations of metal compounds such as silver, aluminum, cadmium, lead, chromium, copper, and iron.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

To obtain a sample of the fish assemblage within a stream during a two month sampling window from April through mid-June. To obtain enough individuals of a single species suitable for tissue contaminant analysis.

5.1.2 Sample Collection Methods Summary

The assemblage was sampled using a single pass with a backpack electrofishing unit multiple habitats throughout the stream. A subsample of five or more fish from a single species was selected for analysis of metal contaminants in the whole fish.

5.1.3 Sampling Start Date

April 1993

5.1.4 Sampling End Date

June 1994

5.1.5 Platform

NA

5.1.6 Sampling Gear

Backpack electrofishing unit

5.1.7 Manufacturer of Instruments

NA

5.1.8 Key Variables

NA

5.1.9 Sampling Method Calibration

NA

5.1.10 Sample Collection Quality Control

See Lazorchak, et al. 1998.

5.1.11 Sample Collection Method Reference

Chaloud, D.J. and D.V. Peck. 1994. Environmental Monitoring and Assessment Program: Integrated Quality Assurance Project Plan for the Surface Waters Resource Group, 1994 Activities. EPA 600/X-91/080, Rev. 2.00. U.S. Environmental Protection Agency, Las Vegas Nevada.

Lazorchak, J.M., Klemm, D.J., and Peck D.V. (editors). 1998. Environmental Monitoring and Assessment Program- Surface Waters: Field Operations and Methods for Measuring the Ecological Condition of Wadeable Streams. EPA/620/R-94/004F. U.S. Environmental Protection Agency, Washington, D.C.

5.1.12 Sample Collection Method Deviations

5.2 Data Preparation and Sample Processing

5.2.1 Sample Processing Objective

See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.2 Sample Processing Methods Summary

See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.3 Sample Processing Method Calibration

See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.4 Sample Processing Quality Control

See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.5 Sample Processing Method Reference

See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

6. DATA MANIPULATIONS

6.1 Name of New or Modified Values

None.

6.2 Data Manipulation Description

See Chaloud and Peck (1994).

7. DATA DESCRIPTION

7.1 Description of Parameters

Parameter Data				Parameter
SAS Name	Type	Len	Format	Label

AL	Num	8		Wet wt. concentration Aluminum (ug/g)
AS	Num	8		Wet wt. concentration Arsenic (ug/g)
AST	Char	3		Arsenic flag
CD	Num	8		Wet wt. concentration Cadmium (ug/g)
CDT	Char	3		Cadmium flag
COMMON_N	Char	20		Common name of sample species
CR	Num	8		Wet wt. concentration Chromium (ug/g)
CU	Num	8		Wet wt. concentration Copper (ug/g)
DATE_COL	Num	8	MMDDYY	Date stream visited
FE	Num	8		Wet wt. concentration Iron (ug/g)
HG	Num	8		Wet wt. concentration Mercury (ug/g)
HGT	Char	1		Mercury flag
LAT_DD	Num	8		Sample Site Latitude (decimal degrees)
LON_DD	Num	8		Sample Site Longitude (decimal degrees)
MOISTURE	Num	8		% moisture of composite sample
NI	Num	8		Wet wt. concentration Nickel (ug/g)
NIT	Char	3		Nickel flag
PB	Num	8		Wet wt. concentration Lead (ug/g)
PBT	Char	3		Lead flag
PRI_SEC	Num	8		Primary/secondary target species (1/2)
SAMPLED	Char	30		Site Sampled Code
SAMP_ID	Num	8		Sample ID
SE	Num	8		Wet wt. concentration Selenium (ug/g)
SET	Char	3		Selenium flag
SPECIES	Char	23		Genus and species of sample
STRMNAME	Char	40		Stream Name from 7.5 map
STRM_ID	Char	6		Stream ID
VISIT_NO	Num	8		Visit Number
YEAR	Num	8		Sample year
ZN	Num	8		Wet wt. concentration Zinc (ug/g)

7.1.6 Precision to which values are reported

7.1.7 Minimum Value in Data Set

Name	Min
AL	6.8
AS	3.75
CD	0.1
CR	0.29
CU	0.39
DATE_COL	04/27/1993
FE	13.8
HG	0.010288
LAT_DD	36.5535
LON_DD	-83.24443889
MOISTURE	66.5
NI	0.125
PB	0.02
PRI_SEC	1
SAMP_ID	0
SE	3.75
VISIT_NO	1
YEAR	1993
ZN	13.6

7.1.7 Maximum Value in Data Set

Name	Max
AL	1531.3
AS	7.672
CD	0.72
CR	5.82
CU	18.8
DATE_COL	06/24/1994
FE	1213.6
HG	0.167937
LAT_DD	41.956013889
LON_DD	-75.2059
MOISTURE	80.2
NI	5.04
PB	2.89
PRI_SEC	2
SAMP_ID	2129572
SE	6.64
VISIT_NO	2
YEAR	1994
ZN	61.5

7.2 Data Record Example

7.2.1 Column Names for Example Records

"AL", "AS", "AST", "CD", "CDT", "COMMON_N", "CR", "CU", "DATE_COL", "FE", "HG", "HGT",
"LAT_DD", "LON_DD", "MOISTURE", "NI", "NIT", "PB", "PBT", "PRI_SEC", "SAMPLED",
"SAMP_ID", "SE", "SET", "SPECIES", "STRMNAME", "STRM_ID", "VISIT_NO", "YEAR", "ZN"

7.2.2 Example Data Records

25.3,3.75,"U",0.11," ","BLUEGILL",0.90,0.40,05/17/1994,15.3,0.042,
" ",38.52530,-75.63110,72.1,0.15,"U",0.06," ",2,"Yes",212968,3.75,"U",
"Lepomis macrochirus","TUSOCKY BR","DE750S",1,1994,22.5

.,.," ",.," "," ",.,.,05/25/1993,.,.," ",39.68369,-79.47240,.,.," ",
.," ",.,"Sampling failed",0,.," "," ","S. BR. LAUREL RUN","MD507S",1,1993,.

114.9,3.75,"U",0.10,"U","WHITE SUCKER",1.36,0.66,05/16/1994,72.9,0.026,
" ",38.92420,-75.98710,73.5,0.20," ",0.05," ",2,"Yes",212966,3.75,"U",
"Catostomus commersoni","NNT NORWICH CR","MD750S",1,1994,21.5

7.6,3.75,"U",0.10,"U","FALLFISH",1.11,3.59,05/16/1994,13.8,0.030," ",38.92420,
-75.98710,72.7,0.20," ",0.03,"U",1,"Yes",212967,3.75,"U",
"Semotilus corporalis","NNT NORWICH CR","MD750S",1,1994,21.5

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

-83 Degrees 14 Minutes 39 Seconds West (-83.24444 Decimal Degrees)

8.2 Maximum Longitude

-75 Degrees 12 Minutes 21 Seconds West (-75.20590 Decimal Degrees)

8.3 Minimum Latitude

36 Degrees 33 Minutes 12 Seconds North (36.55350 Decimal Degrees)

8.4 Maximum Latitude

41 Degrees 57 Minutes 21 Seconds North (41.95601 Decimal Degrees)

9. QUALITY CONTROL / QUALITY ASSURANCE

9.1 Data Quality Objectives

See Chaloud and Peck (1994)

9.2 Quality Assurance Procedures

See Chaloud and Peck (1994)

9.3 Unassessed Errors

NA

10. DATA ACCESS

10.1 Data Access Procedures

10.2 Data Access Restrictions

10.3 Data Access Contact Persons

10.4 Data Set Format

10.5 Information Concerning Anonymous FTP

10.6 Information Concerning Gopher and WWW

10.7 EMAP CD-ROM Containing the Data

11. REFERENCES

Lazorchak, J.M., Klemm, D.J., and Peck D.V. (editors). 1998. Environmental Monitoring and Assessment Program- Surface Waters: Field Operations and Methods for Measuring the Ecological Condition of Wadeable Streams. EPA/620/R-94/004F. U.S. Environmental Protection Agency, Washington, D.C.

Chaloud, D.J. and D.V. Peck. 1994. Environmental Monitoring and Assessment Program - Surface Waters: Integrated Quality Assurance Project Plan for the Surface Waters Resource Group. U.S. Environmental Protection Agency. Office of Research and Development. Washington, D.C.

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